

What is claimed is:

1. A pressure activated valve comprising:
 - a valve housing defining a lumen for receiving bodily fluids therein;
 - a flexible membrane disposed in the valve housing, the flexible membrane including a slit extending therethrough so that the flexible membrane may be moved between an open and a closed configuration based on fluid pressure within the lumen; and
 - a first nonthrombogenic coating formed on fluid contacting surfaces of the flexible membrane.
2. The valve according to claim 1, wherein the nonthrombogenic coating comprises at least one of heparin, hydrogel and phosphorylcholine.
3. The valve according to claim 1, wherein the flexible membrane is formed of silicone.
4. The valve according to claim 1, wherein the slit is one of a linear and a curved slit.
5. The valve according to claim 1, wherein the nonthrombogenic coating is a flexible polymeric coating.
6. The valve according to claim 1, wherein the nonthrombogenic coating includes a material which prevents the formation of blood clots.

7. The valve according to claim 1, further comprising a second nonthrombogenic coating on bodily fluid contacting surfaces of the lumen.
8. The valve according to claim 1, further comprising abutting flexible membranes adjacent to the flexible membrane, including a slit extending therethrough so that the abutting flexible membranes may be moved between an open and a closed configuration based on fluid pressure within the lumen.
9. The valve according to claim 1, wherein the abutting flexible membranes include a beveled groove.
10. A dialysis catheter comprising:
 - an elongated body having a proximal end connectable to a dialysis machine and a distal end adapted for insertion into a blood vessel;
 - a lumen extending through the elongated body between the proximal and distal ends;
 - a valve disposed within the lumen for controlling a flow of blood therethrough; and
 - a nonthrombogenic coating applied to blood contacting surfaces of the valve.
11. The catheter according to claim 10, wherein the valve comprises a flexible membrane with a slit extending therethrough wherein, when a pressure above a predetermined threshold pressure is applied to the flexible membrane, the flexible membrane opens to allow a flow of blood through the slit, wherein the

nonthrombogenic coating covers blood contacting surfaces of the flexible membrane.

12. The catheter according to claim 10, wherein the nonthrombogenic coating is a coating comprising at least one of heparin, hydrogel and phosphorylcholine.
13. The catheter according to claim 11, wherein the predetermined threshold pressure is set to be less than a pressure generated in the lumen by a dialysis machine.
14. A medical device comprising:
 - a lumen extending therethrough, a distal end of the device being adapted to fluidly connect the lumen to a blood vessel;
 - a valve disposed within the lumen for controlling a flow of blood therethrough; and
 - a nonthrombogenic coating disposed on at least a portion of blood contacting surfaces of the device.
15. The medical tube according to claim 14, wherein the valve is pressure activated to open when a fluid pressure within the lumen is at least a predetermined threshold value and remains sealed to prevent blood flow through the lumen when the fluid pressure within the lumen is below the predetermined threshold value.
16. The medical tube according to claim 15, further comprising a housing, wherein the valve comprises a flexible membrane disposed in the lumen, the flexible

membrane including a slit extending therethrough so that, when a pressure above the predetermined threshold pressure is applied in the lumen, the slit opens to allow blood to flow through the valve.

17. The medical tube according to claim 14, wherein the nonthrombogenic coating includes a material which comprises at least one of heparin, hydrogel and phosphorylcholine.

18. A pressure activated valve comprising:

a valve housing defining a lumen for receiving bodily fluids therein; and

a flexible member disposed in the valve housing, the flexible member comprising a plurality of flexible membranes stacked on one another, each of the flexible membranes including at least one slit extending therethrough so that each flexible membrane may be moved between an open and a closed configuration based on fluid pressure within the lumen, wherein when all of the flexible membranes are moved to an open position, the flexible member is open to permit fluid flow through the housing.

19. The valve according to claim 18, further comprising a nonthrombogenic coating formed on fluid contacting surfaces of the flexible member.
20. The valve according to claim 19, wherein the nonthrombogenic coating includes a material which comprises at least one of heparin, hydrogel and phosphorylcholine.

21. The valve according to claim 18, wherein one of a proximally outward and a distally outward face of the flexible member includes a fluid directing recess formed therein to direct fluid flow toward the slits of the flexible membranes.